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PATENT  
Attorney Docket No. 202531/PALL

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

PELZ et al.

Application No. 09/402,721

Art Unit: 1761

Filed: December 28, 1999

Examiner: C. Sherrer

For: METHOD FOR PRODUCING BEER

AMENDMENTS TO SPECIFICATION AND CLAIMS MADE IN RESPONSE TO  
OFFICE ACTION DATED JUNE 25, 2002

*Amendments to the paragraph beginning at page 7, line 15:*

~~It can be~~ is expedient for the cleaning to be carried out until a point in time at which there is no more change in the streaming potential or the zeta potential of the porous membrane. It has been discovered that the streaming potential occurring at the porous membrane during operation or the zeta potential calculated from it (see below) is a good indication of the extent to which the substances clogging the porous membrane have been removed.

*Amendments to the paragraph beginning at page 12, line 13:*

Beer cooled down to 0 °C was ~~passed~~ forced through the porous membrane under isobaric conditions (1 bar), and the amount of filtrate was weighed every 10 seconds. The test was stopped after 200 g of filtrate were obtained. The result is shown as a graph in the diagram of Figure 1. Figure 1 shows that, under the conditions indicated above, the 200 g of filtrate were obtained with the unused filter after approximately 210 seconds.

*Amendments to the paragraph beginning at page 13, line 1:*

The membrane was then treated for 3 hours with a 0.5% aqueous solution of a mixture of surfactants, glucanases, and proteases (P3-Ultrasil 62; manufacturer: Henkel) with a pH of 9-9.5 (~~set~~ adjusted with a 0.15% aqueous solution of a mixture of surfactants and an alkaline

component (P3-Ultrasil 91; manufacturer: Henkel)) at a temperature of 50 °C and subsequently rinsed with warm water (50 °C).

*Amendments to the paragraph beginning at page 18, line 3:*

The severe change in ~~filter test~~ zeta potential of the filter membrane 2 (Figure 5) ~~zeta potential~~ inside meter cell 1 during filtration allows an assessment of the state of the filter candles 19 in filtration chamber 18.

*Amendments to the paragraph beginning at page 23, line 13:*

As is apparent from the data set forth in Table 3, ~~the  $\beta$ -cellulase from *Bacillus subtilis* 4,~~ the Exocellulase derived from *Thermomonospora fusca* has a crystalline:soluble cellulose activity ratio at 60 minutes of 1.33, indicating that it is a superior enzyme for purposes of cleaning porous membranes used in connection with the filtration of beer.

*Amendments to existing claims:*

36. The method of claim 29, wherein cleaning the porous membrane ~~performing step (d) of the method~~ comprises contacting the porous membrane with a cellulase having a crystalline:soluble cellulose activity ratio at 60 minutes of at least about 0.1 to clean the porous membrane.

41. The method of claim 4, wherein the method further comprises pre-filtering the beer before filtering the beer through the porous membrane ~~performing step (a) of the method~~.

42. The method of claim 41, wherein the beer is pre-filtered through Diatomaceous earth or a combination of Diatomaceous earth and deep-bed filtration.